



July 28, 2016

Mr. Mike Cirian  
EPA Information Center  
108 E. 9th Street  
Libby, Montana 59923

Re: Response to Comments on Phase I Site Characterization Sampling and Analysis Plan Addendum, Columbia Falls Aluminum Company, Columbia Falls, Montana

Dear Mr. Cirian:

Roux Associates, Inc. (Roux Associates), on behalf of Columbia Falls Aluminum Company (CFAC), has prepared this response to the written comments provided by USEPA in the letter provided on July 13, 2016 regarding the Phase I Site Characterization Sampling and Analysis Plan Addendum (SAP Addendum). Each of the comments provided by USEPA is presented below, followed by Roux Associates' response in blue.

### **General Comments**

- 1) Due to the presence of animal feces observed at many locations during the reconnaissance, please ensure that terrestrial receptors are evaluated in the ecological risk assessment.

Comment #1 is acknowledged. Terrestrial receptors will be evaluated during the ecological risk assessment.

- 2) In multiple locations in Section 2.0 it is noted that noxious weeds were observed. Although the site is only in the remedial investigation phase, control of noxious weeds will be identified as an ARAR during the feasibility study FS and carried forward through to ROD. It is recommended that CFAC consider adopting a robust weed management program to reduce efforts to eliminate noxious weeds as part of future site operation and maintenance.

Comment is acknowledged. It should be noted that CFAC does conduct a weed management program as part of ongoing operations and maintenance at the Site. Over the past year the weed management has been conducted manually as to not interfere with the RI/FS Phase I Site Characterization sampling activities.

- 3) When the SAP was approved, Roux had not selected a contract laboratory for analysis of samples. Test America Laboratories (TAL) has since been selected as the primary laboratory for sample analysis. Please include a discussion of the selection of Test

America Laboratories as the primary laboratory in Section 2.0 and include TAL's Quality Assurance Plan as an appendix to the SAP addendum.

Section 4.1 of the SAP Addendum provides an update on all of the subcontractors selected for the project. TestAmerica's Quality Assurance Plan was provided in the original SAP Addendum submittal and is included in the revised document as Appendix I to the SAP Addendum.

- 4) After this draft SAP addendum was submitted, Roux and the Agencies agreed to use a field modification form. Please include language on the use of the field modification form written specifically for the CFAC Site somewhere in Section 3.0 and include the field modification form as an appendix to this SAP addendum.

Section 3.11 has been added to the SAP Addendum and summarizes the use of the field modification form. The form is now included in the SAP Addendum in Appendix H.

### **Specific Comments**

- 5) Page 5, Section 2.2.1 – During a May 26, 2016 site visit, DEQ noted an un-named stream channel (see attached photo). Please include collection of surface water as well as sediment samples from this waterway. Please also GPS the location of this stream channel and include its location and any pertinent features on future site maps.

A description of the surface water feature described in Comment #5 was added to Section 2.2.1.5 of the SAP Addendum. As discussed with USEPA during the project update conference calls, two surface water samples were collected from this location in June 2016. A description of surface water sampling locations within the area was added to Section 3.6 of the SAP Addendum. Additional samples will be collected from these locations during Site-wide surface water sampling events if water is present at the time of the event. Additionally, a sediment sample will be collected from each location. A description of the sediment sampling locations was added to Section 3.7.

The location of the steam channel as mapped from the USGS National Hydrology Dataset was provided on Figure 3 of the RI/FS Work Plan, and was also added to the SAP Addendum figures. Additionally, Roux Associates personnel have obtained GPS coordinates of the surface water feature in the field and will include the GPS location on future maps.

- 6) Page 6, Section 2.2.1.2, 2<sup>nd</sup> paragraph – The Site reconnaissance noted that vegetation was observed in the Cedar Creek Reservoir Overflow Ditch. Although flow in the overflow ditch this year was atypical, vegetation in the ditch may cause debris to be obstructed and pooling of water. Please conduct another reconnaissance of the ditch at the end of the growing season and ensure that all perennial and annual vegetative growth be cleared from the ditch.

Roux Associates will conduct reconnaissance of the ditch at the end of the growing season to evaluate conductions within the ditch. However, CFAC does not own, operate, or maintain the ditch. It is CFAC's understanding that the City of Columbia Falls is responsible for operations and maintenance of the ditch. CFAC had a meeting

with City representatives on June 22, 2016 to discuss the conditions of the ditch. During the meeting, CFAC representatives requested that vegetation be removed from the ditch by the City.

- 7) Page 7, Section 2.2.1.3, 1<sup>st</sup> paragraph – Please include the location of the area impacted by bank stabilization work on figure, and describe the measures that will be taken to mitigate any potential impact on surface water and sediment samples and results. If CFAC is hiring an engineering firm to conduct a bank stabilization project on the north side of the Flathead River, this has a high probability of impacting the usability of any surface water and sediment data collected along the north side of the river prior to the stabilization project as well as impacting accessibility to sample monitoring locations in the future. Any figures produced showing the locations where water and sediment will be collected in Flathead River should also show the locations where bank stabilization work is proposed.

Please note the bank stabilization project does not include any work along the bank, and only includes driving sheet piles on the interior of the embankment. The project approval does not require or allow the contractor to disturb any material that might reach the Flathead River. The entire area where work will be performed slopes away from the river, and the engineering firm performing the work has indicated that there should be no impact to the river. The approximate extent of the bank stabilization sheet piling was added to Plate 3.

- 8) Page 8, Section 2.2.2.2, 2<sup>nd</sup> paragraph – Please clarify if the paragraph describes conditions at the Wet Scrubber Sludge Pond, or at a landfill. The paragraph refers to the ‘landfill’ throughout the paragraph.

The paragraph referenced in comment #8 describes conditions observed at the Wet Scrubber Sludge Pond, which is one of the landfills located at the Site. A summary of the various landfills located at the Site, including the Wet Scrubber Sludge Pond, is provided in Section 3.2.1.2 of the RI/FS Work Plan. For clarity purposes, Section 2.2.2.2 of the SAP Addendum was also modified to state that the Wet Scrubber Sludge Pond is considered a landfill in the conceptual site model.

- 9) Page 15, Section 2.2.4.4 – Consider adding TPHs-DROs to Table 6 and provide a discussion for sampling of these chemicals of potential concern (COPCs) in Section 3.0 to allow for opportunistic sampling of the soils around the USTS if there is a possibility that Calbag may remove the USTs during Phase 1. While the tanks themselves may be the responsibility of Calbag, this document should address how any potential contamination resulting from the tanks (i.e., from possible leaks or spills) will be identified. Please include a description of the sampling to be conducted to address this.

Two soil borings were added to the Phase I Scope of Work to assess the conditions around the fueling area, which was discussed and agreed upon with the USEPA during the project meeting in May 2016 and via email correspondence. The two borings are in addition to the one boring proposed in the original scope of the Phase I SAP. All three borings around the fueling area were completed in June 2016 as part of the Phase I Site

Characterization drilling activities. For reference, Section 3.1 of the SAP Addendum was updated to describe the additional borings and sampling.

Calbag does not plan to remove the USTs during the Phase I Site Characterization. CFAC and Roux Associates will provide a SAP or SAP addendum, as appropriate, to the USEPA prior to removal of the USTs in the future. The SAP will address how any potential contamination resulting from the tanks (i.e., from possible leaks or spills) will be identified and include a description of the sampling to be conducted.

- 10) Pages 19-20, Section 2.3.1 – Please remove the section. In Section 2.3, it is stated that no sampling of the production wells will take place. Therefore, the presentation of historical data should not be included in the SAP addendum. If this historical data is important for future decision making, please submit this data as a separate technical memorandum that can be placed in the site file.

Section 2.3.1 was deleted as requested.

- 11) Page 21, Section 2.4, first bullet – Please include the number of drilling locations that required clearing.

Section 2.4 was updated to note that approximately 22 locations required clearing.

- 12) Page 21, Section 2.5, 1<sup>st</sup> paragraph – Please go into greater detail about how depth was gauged and how the presence of water was assessed. Also, please note that field datasheets are included in Appendix G in this paragraph.

Section 2.5 was modified as requested to indicate that the depth to the bottom of the structure was measured utilizing a weighted probe attached to a measuring tape, and water was assessed using a Solinst water level indicator probe. Field datasheets included in Appendix G are now referenced in this paragraph.

- 13) Page 23, Section 2.5.1, bullet list – Please add data ranges for all constituents discussed in the list.

A table was added to Appendix E of the SAP Addendum which summarizes the minimum and maximum detection for each constituent and the location where the maximum detection was observed.

- 14) Page 23, Section 2.5.1, page 23, 3<sup>rd</sup> bullet – Please break out polycyclic aromatic hydrocarbons (PAHs) as a separate bullet and evaluate against screening levels.

Polycyclic aromatic hydrocarbons (PAHs) were added as a separate bullet in Section 2.5.1 and evaluated against screening levels in as requested in Comment #14.

- 15) Page 23, Section 2.5.2 – Since PAHs (i.e. naphthalene) and TPHs-DROs can also be detected by smell, please include olfactory impacts as another field indicator.

As requested in Comment #15, olfactory impacts were included as another field indicator in Section 2.5.2.

- 16) Page 23, Section 2.5.2 – Please describe the criteria that were used to select the drilling locations.

Section 2.5.2. was modified as requested in Comment #16.

- 17) Page 25, Section 2.6.1 – Please provide justification for the statement “the soil gas screening results indicate landfills are not significant sources of methane or volatile organic compounds (VOCs)”. Granted many of the values presented are non-detect (ND). However, there are several detections for VOCs. Please specify how it was determined that landfills are not significant sources of VOCs or remove the statement.

The statement referenced in comment #17 was removed. This data will be further evaluated in conjunction with the groundwater data collected during the Phase I Site Characterization to assess whether that landfills are sources VOCs.

- 18) Page 26, Section 2.6.2 – Please present the isopleth maps for passive soil gas sampling results in the SAP Addendum. Also, if passive soil gas sample results are driving additional investigation in the drum storage and operational grid areas, please present figures showing the additional investigation locations correlated to the isopleths of the relevant constituents (e.g., a map of the drum storage area with tetrachloroethene isopleths and proposed soil boring locations).

As requested in Comment #18, Figure 7 was added to the SAP Addendum which displays estimated PCE mass detection isopleths within the Former Drum Storage Area and the Phase I Remedial Investigation drilling locations. As discussed in Section 3.2 of the Addendum, an additional monitoring well location (CFMW-002) was added to the Phase I Remedial Investigation Scope of Work near the highest PCE detection in the southeast corner of the Former Drum Storage Area at passive sampling location (CFSGP-030). Note that additional monitoring well locations located downgradient and around this area will also be evaluated during groundwater sampling activities.

- 19) Page 26, Section 2.6.1, last paragraph– Please specify under what circumstances “additional soil vapor sampling may also be warranted”.

Section 3.2 of the SAP Addendum was revised to explain the scope revisions that were made to the FSP as a result of the passive soil gas sampling results, including the addition of one water table monitoring well in the Former Drum Storage Area. Additional language was also added to Section 3.2 discussing the evaluation of soil and/or groundwater data from the additional sampling. If sample results indicate that PCE or any other VOCs are identified as contaminants of potential concern in this area, additional sampling, including potentially soil vapor sampling, will be considered during the Phase II investigation.

- 20) Page 27, Section 2.7, last paragraph – please change date from June to July for when the final summary report will be received.

Section 2.7 was modified as requested in Comment #20.

- 21) Page 28, Section 2.8, 1<sup>st</sup> partial paragraph; Figures 8 and 9 – Please renumber Figures 8 and 9 as Figures 9 and 8, respectively for continuity. The discussion of ground-penetrating radar appears before the discussion of additional soil borings within the former fueling area.

Figure numbers were revised throughout the SAP Addendum to incorporate additional figures requested throughout these comments. The ground-penetrating radar figure was placed before the Former Fueling Area figure for continuity.

- 22) Pages 29-37, Section 3.0 – Please add a section discussing modifications to the incremental sampling methodology (ISM) based on discussions between USEPA, CDM Smith, Roux, Hydrometrics, and Glencore/CFAC on June 22, 2016. Please include a revised ISM SOP for soil sampling, and please also include as an appendix the Test America Laboratories (TAL) SOP for ISM sample preparation.

Section 3.10 was added to the SAP Addendum which discusses modifications to the ISM based on discussions with the parties mentioned in Comment #22. Appendix G was added to the SAP Addendum which includes the revised Roux Associates SOP and the TestAmerica SOPs for ISM.

- 23) Page 29, Section 3.1, 1<sup>st</sup> paragraph, 3<sup>rd</sup> sentence – Please reference correspondence from Roux to USEPA.

Correspondence from Roux to USEPA was referenced as requested in Comment #23.

- 24) Page 29, Section 3.1, 2<sup>nd</sup> paragraph; Figures 8 and 9 – Please renumber Figures 8 and 9 as Figures 9 and 8, respectively for continuity. The discussion of additional soil borings appears after the discussion of ground-penetrating radar (see Specific Comment 7 above).

Figure numbers were revised throughout the SAP Addendum to incorporate additional figures requested throughout these comments. The ground-penetrating radar figure was placed before the Former Fueling Area figure for continuity.

- 25) Page 29, Section 3.1, last paragraph – Please note any olfactory observations on field forms. Olfactory observations are just as good as visual observations at determining evidence of petroleum impacts and should be noted. It is also noted that the language specifies that soils will be screened in the field for petroleum impacts, yet TPHs-DROs are not being analyzed for to verify the presence of petroleum impacts detected in the field.

Roux Associates agrees that olfactory observations should be noted. Roux Associates and Hydrometrics field personnel know to document olfactory observations during drilling, if encountered.

As noted in the response to Comment #9, the three soil borings to assess the conditions around the fueling area were completed in June 2016 as part of the Phase I Site Characterization drilling activities and the future removal of the USTS will include TPH-DRO sample analysis.

- 26) Page 30, Section 3.2 2<sup>nd</sup> paragraph – Please include the field modification form as an additional way to communicate changes in the last sentence.

Section 3.2 of the SAP Addendum was revised to include reference to the field modification form as requested in Comment #26.

- 27) Page 30, Section 3.2, 3<sup>rd</sup> paragraph – Given the presence of PCE in the Former Drum Storage Area, it is recommended that a field technician split the coring and run a PID down the core to identify potential locations where PCE may be pooled in the coring in order to take depth discrete samples rather than a composite of the coring. Field dye methods are also available to evaluate soil samples collected during the drilling activities for chlorinated solvents. Please review the soil sampling SOP to determine if the SOP needs to be revised to allow for more flexibility in using additional field methods to detect for the presence of PCE and submit a revised SOP as part of the final SAP addendum if it is revised.

The proposed drilling locations within and around the Former Drum Storage Area, including the additional well location added to the Scope of Work near the highest detection of PCE, were already completed in June 2016 as part of the Phase I Site Characterization drilling activities. Therefore, soil and groundwater sampling results will be evaluated from the samples collected in this area to assess whether additional work is necessary for chlorinated solvents in Phase II. Roux Associates will consider updating the soil sampling SOP for Phase II as indicated in Comment #27.

- 28) Page 31, Section 3.3, 2<sup>nd</sup> paragraph, last sentence – With the use of a field modification form to document field changes, please revise the last sentence.

Section 3.3 was modified as requested in Comment #28.

- 29) Pages 31-32, Section 3.4 – Please add a discussion of historical groundwater elevations, and how the magnitude of seasonal groundwater fluctuations has influenced monitoring well construction. The SAP states that, “The majority of the proposed Phase I monitoring wells will be installed immediately below the groundwater table.” However, during field oversight activities, it has been noted that monitoring wells have been constructed with screened intervals approximately 10-12 feet below the water table. Please discuss this discrepancy in the context of historical groundwater data.

A discussion of historical groundwater elevations was added to Section 3.4 as requested in Comment #29.

- 30) Pages 31 – 32, Section 3.4 – If the proposed construction details used by Cascade Drilling are different than the well installation SOP submitted in the SAP, please provide a revised SOP in this addendum.

As requested in Section 3.4, a revised SOP was provided in Appendix G.

- 31) Page 33, Section 3.5, final two paragraphs – Please add to the section a discussion of why existing production wells cannot be sampled. The description of the wells states that the wells still have large pumps installed within them: why can’t they be sampled?

Additional language was added to Section 3.5 as requested. The existing production well pumps are not operable because they no longer have the appropriate electrical connections. Additionally, due to the size and the weight of the pump, field personnel cannot move the pumps and removal would require the use of heavy machinery, likely including a crane. Due to the size, position, and weight of the downhole equipment, the pumps prevent access to the wells for gauging and sampling.

32) Page 33, Section 3.6 – see comment 5 above

A description of surface water sampling locations within the area described in Comment #5 were added to Section 3.6 of the SAP Addendum.

33) Page 34, Section 3.7 – see comment 5 above

A description of sediment sampling locations within the area described in Comment #5 were added to Section 3.7 of the SAP Addendum.

34) Page 35, Section 3.7, 2<sup>nd</sup> full paragraph, last sentence – Please add provide the number for the figure that depicts channel bottom soil/sand sample locations.

Reference to Plate #3 was added to Section 3.7 as requested in Comment #34.

35) Page 36, Section 3.7 – Please clarify if the sampling design will be documented in another addendum to the SAP or a field modification. It is noted that the surface water sampling design will be reevaluated during low water conditions due to access/safety concerns. Roux will be notifying EPA of the proposed approach in future progress reports, but any change in scope or methodology for the surface water sampling must be documented formally and not limited to a progress report.

CFAC/Roux will document any changes in scope or methodology associated with the surface water sampling in a field modification form submitted to USEPA for approval.

36) Table 6 – Ecological soil screening levels (Eco-SSLs) (EPA 2016) and Oak Ridge National Laboratory (ORNL) toxicological benchmarks (Efroymson et al. 1997a,b) should be added.

Table 6 was modified as requested in Comment #36.

37) Table 8 – Great Lake Water Quality Initiative, Tier II values from Suter and Tsao (1996) should be added.

Table 8 was modified as requested in Comment #37.

38) Table 9 – Please confirm the reference for threshold effect level (TEL) values. These appear to Ingersoll Assessment and Remediation of Contaminated Sediment (ARCS) TEL values (Ingersoll et al. (1996a,b)).

Threshold effect level (TEL) values in Table 9 were obtained from the reference below, which summarizes the work presented in the Ingersoll et al. (1996) references and other references.



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Macdonald, D.D, Ingersoll, C.G., and Berger, T.A. 2000. Development and Evaluation of Consensus-Based Sediment Quality Guidelines, Archives of Environmental Contamination and Toxicology. Vol 39, pg 20-31.

39) Table 9 – Values based on EqP sediment guidelines (ESGs) for PAHs, dieldrin and endrin should be added (EPA 2003a,b,c).

Table 9 was modified as request in Comment #39.

40) Figures 8 and 9 – please renumber the figures to better reflect the progression of discussions in the text (see comment 19 above).

Figures 8 and 9 were renumbered as requested in Comment #40.

Sincerely,

ROUX ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Michael Ritorto", written over a horizontal line.

Michael Ritorto  
Senior Hydrogeologist

Attachments

cc: John Stroiazzo, Columbia Falls Aluminum Company  
Steve Wright, Columbia Falls Aluminum Company  
Lisa DeWitt, Montana Department of Environmental Quality  
Andrew Baris, Roux Associates